REMARKS/ARGUMENTS

Claims 1-11, 13 and 23-28 are pending in this application. Claims 1 and 23 are independent claims. Claims 2, 9, 12, 14-22, 24, and 29-31 have been cancelled. Claims 1, 3, 4 and 23 have been amended.

Claim Rejections- 35 U.S.C. § 102

The Patent Office rejected Claims 1-11, 13 and 23-28 under 35 U.S.C. § 102(e) as being anticipated by Iwatani ("Iwatani", U.S. Patent No. 6023780). Applicant respectfully traverses.

The present invention is directed to a method and system for disk drive data recovery utilizing Cyclic Redundancy Check (CRC) information. The CRC information may be utilized to detect drive anomalies and to verify data path integrity at a byte level on subsequent read operations. The CRC information includes CRC metadata, CRC generated for a data block, or the like. Advantageously, CRC information is the only metadata managed. The present invention makes no distinction between user data and parity information stored for redundancy. CRC is generated as its corresponding data is received to be written to the data drives, stored as metadata, and checked for the parity drive in a stripe similar to operation of the data drives.

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *W.L. Gore & Assocs. v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, "anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added).

Regarding the rejection of Claims 1 and 23, Applicant respectfully submits that Claims 1 and 23 include elements that have not been disclosed, taught or suggested by Iwatani. For example, Iwatani fails to disclose, teach or suggest "comparing the generated error detection and correction code of the read data with the error detection and correction code stored as metadata; determining data validity of data read from the data disk drive based on the comparison of error detection and correction code metadata and the generated error detection and correction code" (emphasis added) or "determining data validity of data read from the data disk drive based on the error detection and correction code metadata and the generated error detection and correction code" (emphasis added) as recited in Claims 1 and 23 respectively.

The Patent Office cites FIG. 5 of Iwatani as support for its assertion. Applicant respectfully disagrees. The Patent Office indicated that P in FIG. 5 of Iwatani is an error detection correction code metadata. " Read Operation 17-5 of Figure 5 of Iwatani teaches that error detection and correction code metadata P is compared to the generated error detection and correction code RP during the read operation" (Office Action dated on June 23, 2004, Page 8). In Iwatani, P is defined as parity data which becomes equal to exclusive OR of divided data d1, d2, d3, ... dm (see Column 16, lines 44 and 48 of Iwatani).

In contrary, in the present invention, the "error detection and correction code metadata" (CRC metadata) is distinguished from conventional CRC generated while data is read for a data disk drive. The CRC metadata in the present invention is only managed metadata which is to be compared to the generated CRC of the read data in order to determine drive anomalies. The CRC metadata is stored on a disk drive separated from the data disk drive which stores its corresponding data block. Moreover, the present invention makes no distinction between user data and parity information in terms of CRC metadata. One of ordinary person in the art will understand that P (parity data) of Iwatani is not equivalent to the CRC metadata of the present invention.

Furthermore, a search of the entire specification of Iwatani failed to find disclosure relating to steps of "comparing" the CRC metadata and the generated CRC and

"determining" disk abnormalities based on the CRC metadata and the generated CRC as recited in Claim 1. In Iwatani, generated RP (Read Parity Data) is *compared* against P (parity data) to *determine* disk abnormalities (FIG. 5 of Iwatani).

Accordingly, Iwatani fails to teach, suggest, or disclose "comparing the generated error detection and correction code of the read data with the error detection and correction code stored as metadata; determining data validity of data read from the data disk drive based on the comparison of error detection and correction code metadata and the generated error detection and correction code," as recited in Claim 1. For reasons similar to the above-mentioned reasons regarding Claim 1, Iwatani fails to teach, disclose, or suggest the foregoing-indicated element recited in Claim 23.

Thus, Claims 1 and 23 are believed to be allowable. Claims 3-8, 10 and 13 depend on Claim 1. Claims 25-28 depend on Claim 23. Claims 3-8, 10, 13, 25-28 are believed to be allowable based on their dependence upon allowable base claims. Removal of all the pending rejections under 35 U.S.C. §102 is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

The Patent Office rejected Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Iwatani. Applicant respectfully traverses.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Ryoka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). *See also In re Wilson*, 165 U.S.P.Q. 494 (C.C.P.A. 1970).

Further, "to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." (emphasis added) (MPEP § 2143). If an independent claim is nonobvious under 35 U.S.C. §103, then any claim

depending therefrom is nonobvious. (emphasis added) *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

As indicated in the foregoing *Claim Rejections – 35 USC § 102* section, the primary reference, Iwatani fails to disclose, teach or suggest all the elements recited in Claim 1. Thus, independent Claim 1 is nonobvious under 35 U.S.C. § 103(a). Claim 11 is believed to be allowable based on its dependence upon Claim 1.

CONCLUSION

In light of the foregoing remarks, Applicant respectfully requests a timely Notice of Allowance.

Respectfully submitted,

LSI Logic, Inc.,

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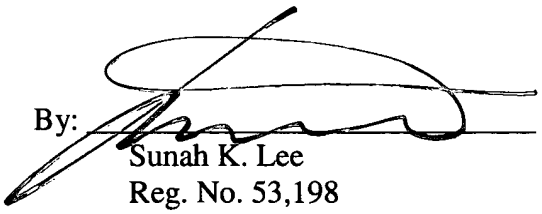
By: 
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